

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (currently amended) A method of inserting empty memory cells into a
2 data flow of network connections of a computer network, the method comprising:
3 receiving an insertion request for an empty memory cell to be inserted into the
4 data flow;
5 ~~receiving a base connection identification (CID) associated with the insertion~~
6 ~~request;~~
7 determining an appropriate insertion scheme for carrying out the insertion request,
8 wherein the appropriate insertion scheme includes a first insertion scheme configured to send the
9 insertion request using a first indicator that the empty memory cell should be shaped using
10 predetermined shaping parameters and a second insertion scheme configured to send the
11 insertion request using a second indicator that the empty memory cell should be unshaped; and
12 ~~based on the appropriate insertion scheme, sending the insertion request to an~~
13 insertion device configured to insert the empty memory cell into a main buffer for the data flow,
14 the insertion request including the first indicator or the second indicator based on the appropriate
15 insertion scheme determined.

1 2. (currently amended) The method of Claim 1, further comprising receiving
2 a base connection identification (CID) associated with the insertion request, wherein the
3 ~~appropriate first insertion scheme is a predetermined insertion scheme configured to send the~~
4 insertion request using the base connection identification (CID), wherein the base connection
5 identification is associated with predetermined shaping parameters.

1 3. (previously presented) The method of Claim 2, wherein the method
2 further comprises shaping the empty memory cell according to the predetermined shaping
3 parameters.

1 4. (currently amended) The method of Claim 1, wherein the appropriate
2 second insertion scheme is a ~~predetermined insertion scheme~~ configured to send the insertion
3 request using dedicated unshaped connection identifications.

1 5. (previously presented) The method of Claim 4, wherein there are 16
2 unshaped connection identifications.

1 6. (previously presented) The method of Claim 4, the method further
2 comprising:
3 configuring the dedicated unshaped connection identifications for the computer
4 network to obtain configured connection identifications;
5 configuring the base connection identification for the configured connection
6 identifications;
7 configuring a cell type indication to be used for the insertion request; and
8 configuring a queue identification to be used for the insertion request.

1 7. (previously presented) The method of Claim 1, wherein the insertion
2 request is received from one of:
3 an operations and maintenance (OAM) device;
4 a performance monitoring device;
5 an available bit rate (ABR) device;
6 a central processing unit; or
7 an operations and maintenance scan device.

1 8. (currently amended) The method of Claim 7, wherein the performance
2 monitoring device and the operations and maintenance scan device each requires ~~an~~ the insertion
3 request to be carried out with the first insertion scheme, a ~~predetermined insertion scheme~~,
4 ~~wherein the predetermined insertion scheme is configured to send the insertion request using the~~
5 ~~base connection identification (CID), wherein the base connection identification is associated~~
6 ~~with predetermined shaping parameters.~~

1 9. (currently amended) The method of Claim 1, wherein the an available bit
2 rate (ABR) device requires ~~an~~the insertion request to be carried out with the second a
3 ~~predetermined insertion scheme, wherein the predetermined insertion scheme is configured to~~
4 ~~send the insertion request using dedicated unshaped connection identifications.~~

1 10. (currently amended) The method of Claim 1, wherein the step of
2 determining ~~an~~the appropriate insertion scheme comprises performing a lookup in a scan table.

1 11. (previously presented) The method of Claim 1, wherein the step of
2 sending the insertion request causes the empty memory cell to be transmitted through the data
3 flow.

1 12. (previously presented) The method of Claim 6, wherein the empty
2 memory cell inserted by the insertion device carries the cell type indication.

1 1213. (currently amended) An integrated circuit configured to insert empty
2 memory cells into a data flow of network connections of a computer network, the integrated
3 circuit comprising:

4 controller circuitry configured to control operations of:

5 receiving an insertion request for an empty memory cell to be inserted into
6 the data flow;

7 — ~~receiving a base connection identification (CID) associated with the~~
8 ~~insertion request;~~

9 determining an appropriate insertion scheme for carrying out the insertion
10 request, wherein the appropriate insertion scheme includes a first insertion scheme configured to
11 send the insertion request using a first indicator that the empty memory cell should be shaped
12 using predetermined shaping parameters and a second insertion scheme configured to send the
13 insertion request using a second indicator that the empty memory cell should be unshaped; and

14 based on the appropriate insertion scheme, sending the insertion request to
15 an insertion device configured to insert the empty memory cell into a main buffer for the data
16 flow, the insertion request including the first indicator or the second indicator based on the
17 appropriate insertion scheme determined.

1 14. (currently amended) The integrated circuit of Claim 13, further
2 comprising receiving a base connection identification (CID) associated with the insertion
3 request, wherein the appropriate ~~first~~ insertion scheme is a ~~predetermined~~ insertion scheme
4 configured to send the insertion request using the base connection identification (CID), wherein
5 the base connection identification is associated with predetermined shaping parameters.

1 15. (previously presented) The integrated circuit of Claim 14, wherein the
2 controller circuitry is further configured to control shaping the empty memory cell according to
3 the predetermined shaping parameters.

1 16. (currently amended) The integrated circuit of Claim 13, wherein the
2 ~~appropriate second insertion scheme is a ~~predetermined~~ insertion scheme~~ configured to send the
3 insertion request using dedicated unshaped connection identifications.

1 17. (previously presented) The integrated circuit of Claim 16, wherein there
2 are 16 unshaped connection identifications.

1 18. (previously presented) The integrated circuit of Claim 16, wherein the
2 controller circuitry is further configured to control operations of:
3 configuring the dedicated unshaped connection identifications for the computer
4 network to obtain configured connection identifications;
5 configuring the base connection identification for the configured connection
6 identifications;
7 configuring a cell type indication to be used for the insertion request; and
8 configuring a queue identification to be used for the insertion request.

1 19. (previously presented) The integrated circuit of Claim 13, wherein the
2 insertion request is received from one of:
3 an operations and maintenance (OAM) device;
4 a performance monitoring device;
5 an available bit rate (ABR) device;

6 a central processing unit; or
7 an operations and maintenance scan device.

1 20. (currently amended) The integrated circuit of Claim 19, wherein the
2 performance monitoring device and the operations and maintenance scan device each requires an
3 the insertion request to be carried out with a ~~predetermined~~the first insertion scheme, wherein the
4 ~~predetermined insertion scheme is configured to send the insertion request using the base~~
5 ~~connection identification (CID), wherein the base connection identification is associated with~~
6 ~~predetermined shaping parameters.~~

1 21. (currently amended) The integrated circuit of Claim 13, wherein the an
2 available bit rate (ABR) device requires an insertion request to be carried out with a
3 ~~predetermined~~the second insertion scheme, wherein the ~~predetermined insertion scheme is~~
4 ~~configured to send the insertion request using dedicated unshaped connection identifications.~~

1 22. (previously presented) The integrated circuit of Claim 13, wherein with
2 the step of determining an appropriate insertion scheme, the controller circuitry is further
3 configured to control performing a lookup in a scan table.

1 23. (previously presented) The integrated circuit of Claim 13, wherein the
2 step of sending the insertion request causes the empty memory cell to be transmitted through the
3 data flow.

1 24. (previously presented) The integrated circuit of Claim 18, wherein the
2 empty memory cell inserted by the insertion device carries the cell type indication.

1 25. (currently amended) A computer-readable medium carrying one or more
2 sequences of one or more instructions for inserting empty memory cells into a data flow of
3 network connections of a computer network, the one or more sequences of one or more
4 instructions including instructions which, when executed by one or more processors, cause the
5 one or more processors to perform steps of:

6 receiving an insertion request for an empty memory cell to be inserted into the
7 data flow;

8 ~~receiving a base connection identification (CID) associated with the insertion~~
9 ~~request;~~
10 determining an appropriate insertion scheme for carrying out the insertion request
11 , wherein the appropriate insertion scheme includes a first insertion scheme configured to send
12 the insertion request using a first indicator that the empty memory cell should be shaped using
13 predetermined shaping parameters and a second insertion scheme configured to send the
14 insertion request using a second indicator that the empty memory cell should be unshaped; and
15 based on the appropriate insertion scheme, sending the insertion request to an
16 insertion device configured to insert the empty memory cell into a main buffer for the data flow,
17 the insertion request including the first indicator or the second indicator based on the appropriate
18 insertion scheme determined.

1 26. (currently amended) The computer-readable medium of Claim 25, further
2 comprising receiving a base connection identification (CID) associated with the insertion
3 request, wherein the appropriate ~~first~~ insertion scheme is a ~~predetermined~~ insertion scheme
4 configured to send the insertion request using the base connection identification (CID), wherein
5 the base connection identification is associated with predetermined shaping parameters.

1 27. (previously presented) The computer-readable medium of Claim 26,
2 wherein the instructions further cause the processor to perform a step of shaping the empty
3 memory cell according to the predetermined shaping parameters.

1 28. (currently amended) The computer readable-medium of Claim 25,
2 wherein the ~~appropriate~~ second insertion scheme is a predetermined insertion scheme configured
3 to send the insertion request using dedicated unshaped connection identifications.

1 29. (previously presented) The computer-readable medium of Claim 28,
2 wherein there are 16 unshaped connection identifications.

1 30. (previously presented) The computer-readable medium of Claim 28,
2 wherein the instructions further cause the processor to perform steps of
3 configuring the dedicated unshaped connection identifications for the computer
4 network to obtain configured connection identifications;

5 configuring the base connection identification for the configured connection
6 identifications;

7 configuring a cell type indication to be used for the insertion request; and
8 configuring a queue identification to be used for the insertion request.

1 31. (previously presented) The computer-readable medium of Claim 25,
2 wherein the insertion request is received from one of:

3 an operations and maintenance (OAM) device; a performance monitoring device;
4 an available bit rate (ABR) device; a central processing unit; or
5 an operations and maintenance scan device.

1 32. (currently amended) The computer-readable medium of Claim 31,
2 wherein the performance monitoring device and the operations and maintenance scan device
3 each requires ~~an~~ the insertion request to be carried out with a ~~predetermined~~ the first insertion
4 scheme, wherein the ~~predetermined insertion scheme is configured to send the insertion request~~
5 ~~using the base connection identification (CID), wherein the base connection identification is~~
6 ~~associated with predetermined shaping parameters.~~

1 33. (currently amended) The computer-readable medium of Claim 25,
2 wherein the an available bit rate (ABR) device requires ~~an~~ the insertion request to be carried out
3 with a ~~predetermined~~ the second insertion scheme, wherein the ~~predetermined insertion' scheme~~
4 ~~is configured to send the insertion request using dedicated unshaped connection identifications.~~

1 34. (currently amended) The computer-readable medium of Claim 25,
2 wherein the step of determining ~~an~~ the appropriate insertion scheme further causes the processor
3 to perform a lookup in a scan table.

1 35. (previously presented) The computer-readable medium of Claim 25,
2 wherein the step of sending the insertion request causes the processor to perform a step of
3 transmitting the empty memory cell through the data flow.

1 36. (previously presented) The computer-readable medium of Claim 30,
2 wherein the empty memory cell inserted by the insertion device carries the cell type indication.

1 37. (new) A device of inserting empty memory slots into a data flow, the
2 device comprising:
3 logic configured to receive an insertion request for an empty memory slot to be
4 inserted into the data flow;
5 logic configured to determine an appropriate insertion scheme for carrying out the
6 insertion request, wherein the appropriate insertion scheme includes a first insertion scheme
7 configured to send the insertion request using predetermined shaping parameters, wherein
8 connection identification is associated with predetermined shaping parameters and a second
9 insertion scheme configured to send the insertion request using an unshaped connection
10 identification; and
11 logic configured to send the insertion request to an insertion device configured to
12 insert the empty memory slot into the data flow, wherein the insertion of the empty memory slot
13 into the data flow is performed before shaping of the data flow.